SERIAL NO.: 10/666,990 *ART UNIT: 2872*

CLAIM AMENDMENTS

1. (cancelled)

2. (currently amended) ~~The imaging system of claim 1, wherein~~ A multi-mode scanning imaging system for imaging an object, comprising:

a plurality of discrete two-dimensional microscope arrays for scanning along a direction of scan, each microscope array being configured to image the object;

a scanning mechanism for producing said scan as a result of a relative movement between the microscope arrays and the object along said direction of scan;

image sensors corresponding to the microscope arrays for capturing image data representative of the respective images of the object imaged thereby; and

a mode implementation system for combining the image data captured by said image sensors during a scan of the scanning mechanism;

wherein said direction of scan is implemented along a single dimension; said microscope arrays are configured to operate according to different modes of operation of the imaging system and produce correspondingly different images of the object during said scan of the scanning mechanism; and said microscope arrays sequentially scan ~~the object sequentially~~ and image a same area

of the object during said scan of the scanning mechanism.

3. (currently amended) The imaging system of claim 2, wherein said image data corresponding to said ~~different~~ microscope arrays are registered with one another by said mode implementation system.

4. (currently amended) The imaging system of claim 3, wherein said image data corresponding to said ~~different~~ microscope arrays represent respectively different colors.

5. (currently amended) The imaging system of claim 3, wherein said image data corresponding to said ~~different~~ microscope arrays represent respectively different object surfaces.

6. (currently amended) The imaging system of claim 2, further comprising an illumination system, wherein said different microscope arrays operate in at least two different modes of microscopy during said scan of the scanning mechanism.

7. (original) The imaging system of claim 6, wherein said different modes are selected from the group trans-illumination microscopy, epi-illumination microscopy, fluorescence microscopy, and two-photon microscopy.

8. (cancelled)

9. (cancelled)

10. (cancelled)

11. (cancelled)

12. (cancelled)

13. (cancelled)

14. (cancelled)

15. (cancelled)

16. (cancelled)

17. (currently amended) The imaging system of claim ~~1~~2, wherein said scanning mechanism comprises a tray and said microscope arrays comprise discrete modules removably supported by said tray.

18. (cancelled)

19. (currently amended) ~~The method of claim 18, further comprising~~ A method for imaging an object with a multi-mode imaging system, comprising the following steps:

providing a plurality of discrete two-dimensional microscope arrays for scanning the object along a direction of scan, each microscope array being configured to image the object;

producing said scan as a result of a relative movement between the microscope arrays and the object such that each of the microscope arrays is scanning and imaging a same area of the object sequentially ~~with each of said microscope arrays~~ during a single scanning operation along a single dimension in said direction of scan;

capturing image data representative of respective images of the object while said microscope arrays are configured to operate according to different modes of operation of the imaging system and produce correspondingly different images of the object during the scan; and

combining the image data captured according to said different modes of operation of the imaging system.

20. (currently amended) The method of claim 19, further comprising registering said image data corresponding to ~~different~~

said microscope arrays with one another according to said ~~desired~~ different modes of operation of the imaging system.

21. (currently amended) The method of claim 20, wherein said image data corresponding to ~~different~~ said microscope arrays represent respectively different colors.

22. (currently amended) The method of claim 20, wherein said image data corresponding to ~~different~~ said microscope arrays represent respectively different object ~~planes~~ surfaces.

23. (previously presented) The method of claim 19, further comprising providing an illumination system, wherein different microscope arrays operate in at least two different modes of microscopy during said relative movement between the microscope arrays and the object.

24. (original) The method of claim 23, wherein said different modes are selected from the group trans-illumination microscopy, epi-illumination microscopy, fluorescence microscopy, and two-photon microscopy.

25. (cancelled)

26. (cancelled)

27. (cancelled)

28. (cancelled)

29. (cancelled)

30. (cancelled)

31. (cancelled)

32. (cancelled)

33. (cancelled)

34. (currently amended) The method of claim ~~18~~19, further comprising providing a tray and removably supporting said microscope arrays as discrete modules by said tray.